



LED Throwies

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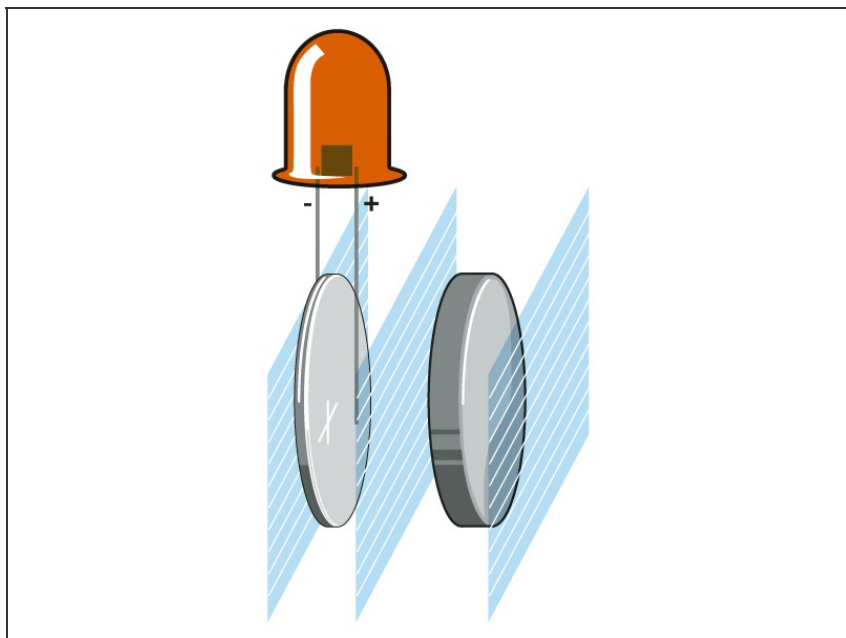
PARTS:

- [LED \(1\)](#)
20 cents each from HB Electronic Components (<http://hebeiltd.com.cn>).
- [Tape \(1\)](#)
One roll will make many throwies.
- [Batteries \(1\)](#)
25 cents each from CheapBatteries.com.
- [Disc magnet \(1\)](#)
25 count for about \$15 from Amazing Magnets (<http://amazingmagnets.com>).
- [Epoxy \(1\)](#)
Weather-resistant alternative to tape. Available from Newark InOne (<http://newark.com>).

SUMMARY

Make and toss a bunch of these inexpensive little lights to add color to any ferromagnetic surface in your neighborhood.

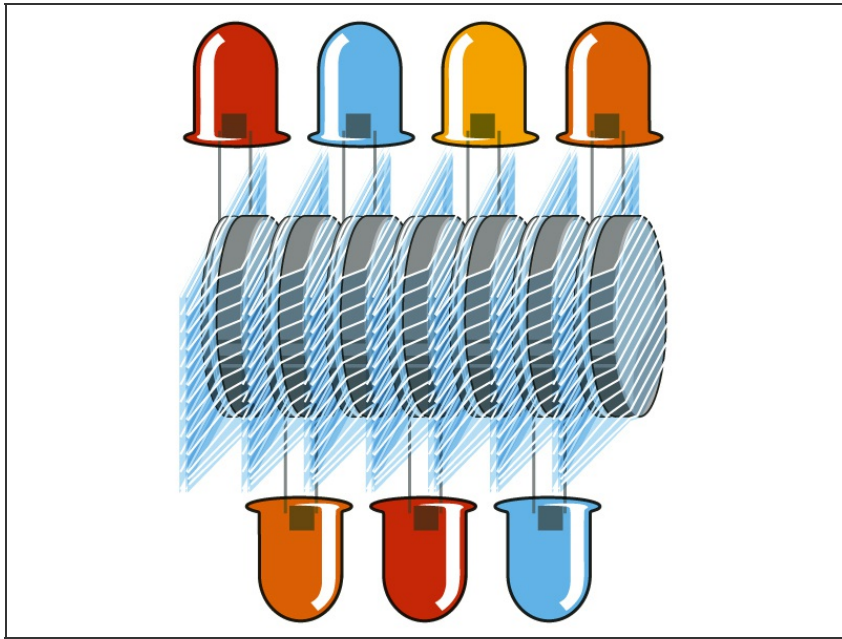
Step 1 — Test the LED.



- Pinch the LED's leads to the battery terminals, with the longer lead (the anode) touching the positive terminal (+) of the battery, and the shorter lead (the cathode) touching negative (-).
- Confirm that the LED lights up.
- Tape the LED leads to the battery by cutting off a 7" piece of strapping tape and wrapping it once around both sides of the battery. Keep the tape very tight as you wrap. The LED should not flicker.
- Place the magnet on the positive terminal of the battery, and continue to wrap the tape tightly until it's all done. The magnet should hold firmly to the battery.
- The battery's positive contact surface extends around the sides of the battery. Don't let the LED's cathode touch the positive terminal, or you'll short the circuit.
- That's it — you're ready to throw (or make a few dozen more). Throw it up high and in quantity to impress your friends and city officials.



Step 2



- A throwie will shine for about 1-2 weeks, depending on the weather and the LED color. To get one off a ferro-magnetic surface, don't pull it, or it may come apart. Instead, apply a lateral force to the magnet base, and slide it off the surface while lifting it with a fingernail or tool.
- Throwies naturally chain together in your pocket, making multi-segmented throwie bugs, which will also stick to metal surfaces if they aren't too long.

This project originally appeared in [MAKE Volume 6](#), page 116.

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